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<b>Notice of Allowability</b>	Application No.	Applicant(s)
	10/653,239	IWASAKI ET AL.
	Examiner Charlie Peng	Art Unit 2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to \_\_\_\_\_.
2.  The allowed claim(s) is/are 1-20.
3.  The drawings filed on 03 September 2003 are accepted by the Examiner.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None
 of the:
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

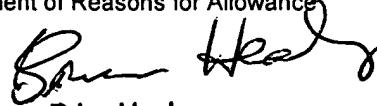
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of
 Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

#### Attachment(s)

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 20050208
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

  
Brian Healy  
Primary Examiner

## DETAILED ACTION

### ***Allowable Subject Matter***

Claims 1-20 are allowed. The following is an examiner's statement of reasons for allowance:

Independent claims 1 and 2 teach a light guide having light-scattering particles and a method of designing the light guide. Claim 1 further establishes a mathematical relationship of a light-output efficiency, a scattering cross section of each of the light-scattering particles ( $\Phi$ ), a density of the light-scattering particles ( $N_p$ ), a length of the light guide ( $L_G$ ), and two equation coefficients. While it is known in the art that the light-output efficiency is inversely proportional to each of these physical quantities ( $\Phi$ ,  $N_p$ ,  $L_G$ ), there exists no obvious motivation for one having ordinary skill in the art to formulate such an exponential relationship. It is this examiner's opinion that the prior art of record, taken alone or in combination, fails to disclose or render obvious in combination with the rest of the limitations of the base claim.

Claim 2 further establishes the product of the scattering cross section of each of the light-scattering particles ( $\Phi$ ), the density of the light-scattering particles ( $N_p$ ), the length of the light guide ( $L_G$ ), and the correction coefficient ( $K_c$ ) to be less than or equal to 0.9. While it is known in the art that each of these physical quantities ( $\Phi$ ,  $N_p$ ,  $L_G$ ) has a negative effect on the light-output efficiency, there exists no obvious motivation for one having ordinary skill in the art to determine a range for their mathematical product as part of the light guide designing process. It is this examiner's opinion that the prior

art of record, taken alone or in combination, fails to disclose or render obvious in combination with the rest of the limitations of the base claim.

Claims 3-20 are allowed by virtue of being dependent upon an allowed claim 2.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- I. U.S. Patent 5,196,960 to Matsuzaki et al., regarding the effect of light-scattering particles in an optical medium on its light-transmission efficiency.
- II. U.S. Patent 3,512,876 to Marks, regarding the effect of the size the particles in an optical medium on the light-scattering.
- III. U.S. PGPub 2003/0218180 to Fujiwara, regarding the low light output efficiency due to random scattering of light by particles.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlie Peng whose telephone number is (571) 272-2177. The examiner can normally be reached on 8:30 am - 5 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charlie Peng  
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Brian Healy  
Primary Examiner